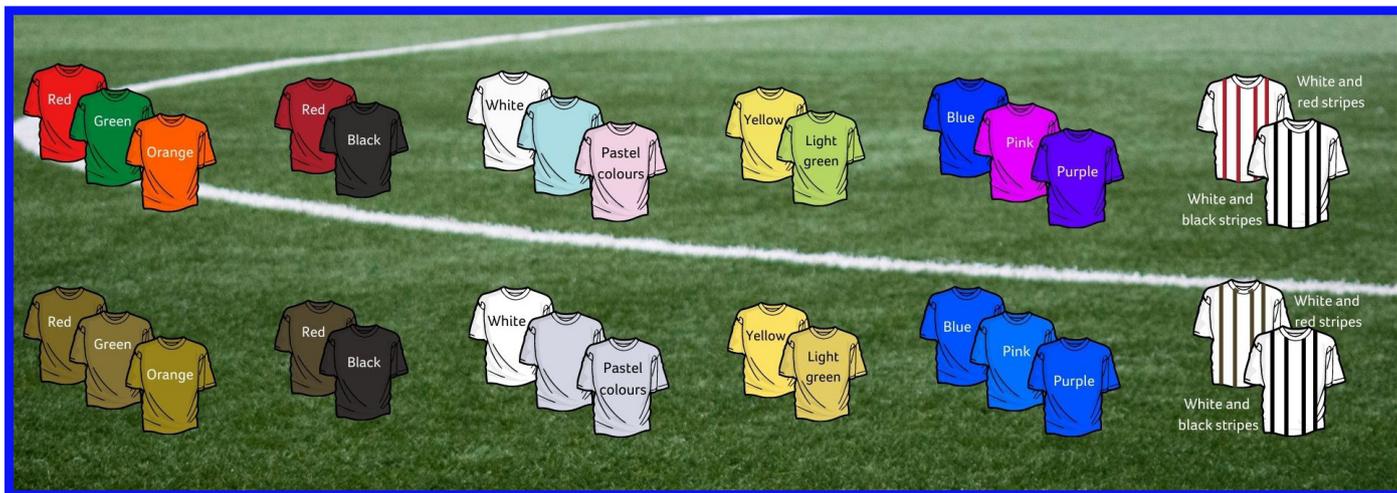




Colour Blindness and Sport Advice When Selecting Kit Colours

What is colour blindness?

We see colour through 3 types of cone cells in our eyes, which absorb red, green or blue light. With colour blindness (colour vision deficiency, CVD) one type doesn't operate normally. Most types of colour blindness involve defects in red or green cones, meaning **many** colour combinations can be confusing.



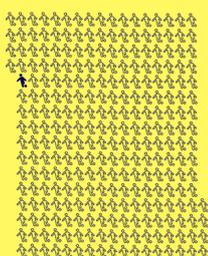
The shirts on the **top row** are shown in normal colour vision. Those in the **bottom row** are a colour blind simulation of the **top row**.

Colour blindness is one of the world's most common inherited conditions. Statistically it affects...

1 in 12 men



1 in 200 women



Approximately
300 million people



worldwide

Why can some kit colour combinations cause problems?

Colour blindness is a particularly important issue for sport as kit colour is fundamental to a team's individual identity. The most obvious problem for colour blind people in team sports is distinguishing between kits.

There are colour blind kit clashes at all levels in different sports, from grassroots to International competitions, which create fundamental problems for some players, coaches and match officials and for millions of fans.

Challenges for people with CVD include distinguishing kit colours

- between the outfield players of different teams
- between outfield players and goalkeeper(s)
- between outfield players and match officials
- of some kits which can 'disappear' against the colour of the pitch;
- under different types of lighting e.g. moving from shade into sunlight, floodlighting; and on TV, especially wide angle shots and when viewing on small screens

Normal vision



Colour blind simulation





Normal vision

Colour blind simulation

Kit colour combinations that cause the greatest problems

Refer to the graphics on the previous page to see which colour combinations cause the greatest problems.

- The more colour combinations there are in a kit, the greater the risk of a kit clash occurring
- All-red, all-orange and all-green kits can be difficult to distinguish from the colour of the pitch
- Some sock colours can 'disappear' against the colour of the pitch which can affect the ability of colour blind players to judge the movement of the ball and affect the decision-making of colour blind match officials

Quick check for kit 'clashes'

Addressing colour blindness simply means applying some basic principles, it doesn't necessarily mean changing your team's colours – it simply means thinking about how you use them.

A simple way to check if two kits might clash is to imagine how they might appear in greyscale. You can use your smartphone/ tablet 'greyscale' or 'mono' camera settings to look at both kits. If they are similar in 'greyscale' they are likely to be a 'colour blind' kit clash. Some single colour kits e.g. all-red, can be difficult to distinguish from grass, especially for fans watching matches on tablets and smart phones.

Ideally one team should play in a dark kit and the other in a light kit. Therefore, when selecting new home and away kits consider choosing one dark kit and one light kit.

Key points to consider for home and away kits

- Avoid single colour red, orange, green or black kits, if possible
- If your home kit is dark, select a light away kit colour
- Where shirts and shorts/socks are a different colour there should be good colour contrast between shirts and shorts.
- Ideally have socks that match either the shirt or shorts - avoid red, orange and green socks
- If shirts are patterned, ensure the pattern is on the entire shirt and not just the front or back
- Patterned v single coloured kit combinations generally help colour blind, players provided the colours used do not clash with the opponent's kit
- Goalkeepers' and match officials' kits should not clash with outfield players or the pitch as this can cause problems not only for spectators but also for colour blind players and could put your team at a disadvantage
- Remember to check that shirt numbers are legible e.g. use white numbers against red, not black numbers.



Normal vision



Colour blind simulation



Normal vision



Colour blind simulation



For further resources refer to the TACBIS factsheets for Players, Coaches, Clubs, Supporting Colour Blind Fans, Organising a Colour Blind Friendly Tournament, and Marketing, Communications and Commercial Implications.